

Name: ANSWER KEY TP: \_\_\_\_\_

HW#351 Algebraic  
Honors Geometry  
Due Date: Friday, Nov. 9<sup>th</sup>, 2012

Mon, Jan 28<sup>th</sup>

Failure to show all work and write in complete sentences will result in LaSalle!

1) Complete the logical argument by giving a reason for each step.

$$8x - 5 = -2x - 15$$

Given

$$10x - 5 = -15$$

a. ?

$$10x = -10$$

b. ?

$$x = -1$$

c. ?

a. addition

b. addition

c. division

2) Solve the equation. Write a reason for each step.

$$-12x = 28 - 16x$$

(format like this)

Equation

Reason:

$$\begin{array}{r} -12x = 28 - 16x \\ +16x \quad +16x \end{array}$$

given

$$\frac{4x}{4} = \frac{28}{4}$$

addition

$$x = 7$$

division

3) Solve the equation. Write a reason for each step.

$$7(x-11) = 12x - 122$$

$$7(x-11) = 12x - 122$$

given

$$7x - 77 = 12x - 122$$

distributive

$$-77 = 5x - 122$$

subtraction

$$+122 = +122$$

addition

$$45 = 5x$$

division

$$x = 9$$

4) Solve the equation for r. Write a reason for each step.

$$s = 4(2r + 5)$$

$$s = 4(2r + 5)$$

given

$$s = 8r + 20$$

distributive

$$s - 20 = 8r$$

subtraction

$$\frac{s-20}{8} = r$$

division

5) Solve for r. Write a reason for each step.

$$s = 7r - 33$$

$$s = 7r - 33$$

given

$$s + 33 = 7r$$

addition

$$\frac{s+33}{7} = r$$

division

6) Solve for r. Write a reason for each step.

$$s = 8(2r - 5)$$

$$s = 8(2r - 5)$$

given

$$s = 16r - 40$$

distributive

$$s + 40 = 16r$$

addition

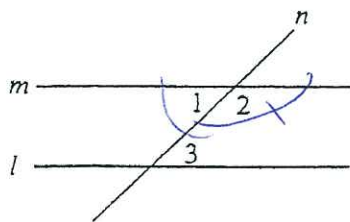
$$\frac{s+40}{16} = r$$

division

PUSH IT TO THE LIMIT.

7)

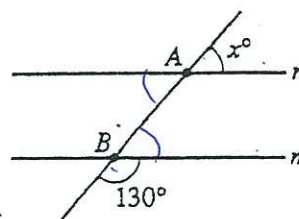
In the figure below, parallel lines  $l$  and  $m$  each intersect line  $n$ . The measures of angles 1 and 2 are not equal. Which of the following is a true statement about the measures of angles 2 and 3?



- A. Their sum is  $90^\circ$ .  
 B. Their sum is  $180^\circ$ .  
 C. Each is  $90^\circ$ .  
 D. They are not  $90^\circ$  but are congruent.  
 E. They are less than  $90^\circ$  and are not the same.

8)

As shown in the diagram below, parallel lines  $n$  and  $m$  are intersected by  $\overleftrightarrow{AB}$ . What is the value of  $x$ ?

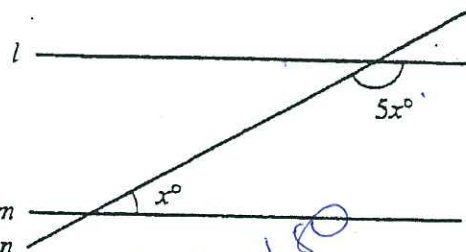


- A. 130  
 B. 70  
 C. 60  
 D. 50  
 E. 40

$$x = 50$$

9)

In the figure below, parallel lines  $l$  and  $m$  are intersected by line  $n$ . What is the value of  $x$ ?



- F. 6  
 G. 30  
 H. 36  
 J. 45  
 K. 60

$$6x = 180 \\ x = 30$$

10)

A high school sells student tickets for a band concert for \$2 each and nonstudent tickets for \$4 each. How many student tickets did the high school sell if the high school sold 220 tickets worth a total of \$640?

- A. 180  
 B. 120  
 C. 110  
 D. 100  
 E. 40

$$S = \$2 \quad 2S + 4N = 640 \\ NS = \$4 \quad (S + N = 220) \\ 2S + 4N = 640 \\ -2S - 2N = -440 \\ \hline 2N = 200 \\ N = 100$$

11)

In the complex number system,  $i^2 = -1$ . What does  $(2 + 3i)(-1 + 7i)$  equal?

- F.  $-23 + 0i$   
 G.  $-23 + 11i$   
 H.  $0 + 11i$   
 J.  $0 + 30i$   
 K.  $19 + 11i$

$$\begin{aligned} & -2 + 14i - 3i + 21i^2 \\ & -2 + 11i - 21 \\ & -23 + 11i \end{aligned}$$

12)

Jana's average test score after 5 tests in chemistry was exactly 86 points, and she scored 78, 93, 84, and 88 points on the first 4 tests. How many points did she score on the 5th test?

- A. 69  
 B. 85  
 C. 86  
 D. 87  
 E. 90

$$\begin{aligned} & 78, 93, 84, 88 \\ & 343 + x = 86 \cdot 5 \\ & 343 + x = 430 \\ & x = 87 \end{aligned}$$